SEQUENCE LISTING

## FIG. 1

## <400> 1

aaaaccacca gggttgttgc tggaaagttt ttattcctgg attaaaggca aggatcagcc 60 tgtattttag caatttettt ttaaggttaa tgteecatge gecaectaet tetggggeec 120 tgttccagcc ettetttatg tgttgaccac ttctaggtcc agcaettecc aactetgetg 180 cgcagtggac tcaatcccct gggaagtcct ttaaaaatgc ccaagtcagc ccccgcctac 240 ccccaaagat gcatggacca gaaatctctg aaaggtggcc tgagtattac tattttctaa 300 aaggetetet cagaccattt taatgggeac ccagtgttga aaataactge tecagtttgt 360 taaaaaataa ttggtgtgaa tattggcaaa agccctctgg cacaaagaaa gagaaccagt 420 ttcttctagc taatgtttgt tagccagaat tatctgtggc atagtccatg tgacttaata 480 gacetggtet tecagggeag etgaatgeaa atgtttetea egtgtagaac gggatgteag 540 ggcttacaga gaaagtggga aactggaatg atgactceat ctaattcggc catgctggat 600 gattcacctg gattctctca tgtcctgagc attgaaaaca taatgaagag tttttaaatt 660 gaatgtttaa aagagtgaaa acaacteeat eeetttttet gttteetttt acettgtatt 720 tatgtaccae caggtacett getettggea gtgagegtga atgaatggea cageteagee 780 cctgaagcct gtgtgcagag attgagggat tgtgatggag tagttcattc atgctcatgt 840 taagggggt gctaatagca gactagtgct cctgcgatta ttaatatcta ggtctgggac 900 agattgtgat ggcttctttt ccagttgcca cctcagcaga aagggaaata gaaaacccta 960 acttgtaaag ttagacaatt agactgtaaa gtttgtatat gtgacaactt cagatacaaa 1020 gacacacact taccettgac ggggettaag aggagagtgt caaacataat accaaagtga 1080 aagaagatag ctcttcatct acaaattatt tttaaacaca tttaccaggt taaacaataa 1140 ctaatttttc ggaagagaag agtacccaaa gtcaaatgcc ctaagacgaa gagatgctta 1200 tggcattttt ttttaaataa agaaaatgca aagttagagt ggttctgaag gaacctagga 1260 tgaataaggt acagacatga ttattctaat ggtgcagaca ggattgagag agaagggggg 1320 ággggagága tggagaaagg catggatgga ágatgacgtt tggáttcaga ttttggaaag 1380 gagagtaaag gaaggaggta agcagagatt tattttttaa attttattaa tgtgttttcc 1440 cctctttttc ttgttatttt tctcatctgt ctgttcatac ttggatattt tgtccaataa 1500 actatettet aaggaetetg aaaatgeact gaatattttt ggagggttta etggggtgee 1560 agacgccact ttaggagttt tacatatcct ctccatttca tttagttctc ttagcacaga 1620 gaagtgggag aagatagtcc cattttacag gtgggatgaa gagagagatg gaggaatttg 1680. ccccaggtta ctcagctaga aggtggtgaa gaactcaagc cttcggatat cagcgcctgg 1740 catttaacta ccaateggte etgetgggac teeggeteet etggcaccat eccegggace 1800 tactcagaga gtttgcacgt ggccggtcgc gttccatcgt ctaacaaggt ccagcacagc 1860 gcaaatccga agatcgtcta ccccggggaa aaagagagtc tgtttaattc tcctgtggcc 1920 ctccaagtga gttcttttgg gttccattgc ctagacgagg aaagtgaggc tttgcctgct 1980 ctgcgctcac agggtcggca agtagtggga ccctaggttc ctgcagtatt ccagagataa 2040

```
tcaaagctgc acaggtctcg tcatttttat gcaaaggcgt ccggaaggct cgaactctcc 2100
cttgcacaag cccatctgtc tctgtgcgcc gcccccggga cacggaagca ggcggcgagc 2160
agegeegagt gggtggagaa eegteeeeeg eeacteaeee eteggeeaae teteegegee 2220
tteteageeg geacecacga ggeegacete teteggeeta aaaaaaaaaa aaaaaaatee 2280
eggeeteece tgcacceege eegeegeeee eagggagetg cattaatatt aatetegetg 2340
aataattgaa ggccagagat ttattcgagc ttcggcgggg gagggagcgc agctgggccg 2400
cgtttaggct gcaccacccg cgtgtttcag ccgctcgact ccgctggacc tgggaccccc 2460
agacgtggga ggatggggtg ggtgtgcctg cctgtgagtt tgggggtgag tgtgagctga 2520
agegggtget eeggggagtg aggagggage geeagggget geteeaggga ggeggagaeg 2580
gaggggcate cegggtetee gegeggtege etgegettea eccegeaegg ggtgaeetgg 2640
ggccacgcgg gcttcagggg aaacaatagc tactccttag atcctgggct cctgccaccg 2700
getgeecaag cetteeegga egageggegg ggeetetttt ettatttgge taatttatgg 2760
cgagaggctg ggggaaggga tggcagagga gggaccgcga ctgaaaatgg gggcgggggg 2820
eggeggttaa aggagttgcc egaggeggeg gegegggtga tgteagetet egaegaaaat 2880
agagaggat cgcctgcaaa tccccagctc cggcggggct aaaccttgca atccctccct 2940
ggeeggegee gageeagage geageggeet ceaeegeete eecaggegeg cacacaceeg 3000
cacacgegea egeacgetea cegteetetg ceaceactet etgeteege eactegeege 3060
gecegegage ceegeageaa ageacaggtg geageggetg caggggegea tegeeggegt 3120
gegeeeteet geageeetgg gegeateget etetegggga ageeaceete ggageeceeg 3180
gageteeeeg ceaagegeea teeeegeggg eggaggggag egegggtege gegeegtgga 3240
gagcogggac goggattagc gcccgcagga gcctcctgcg cccgttgagg cgctaaaggg 3300
ettacccegg aggegggtgg aagggegge agaggeteet ettaaatace geteeeggee 3360
geacttegeg etcaceeegg egteegettt etceetegee cacagetgee ggatagtget 3420
gaagaggagg gggcgttccc cagaccatgg catctacgga agggtgaggg gatttttatc 3480
tgtaccegcg ggaaagcggg gtcacgcgcg gggtggtggc gcccctatcc gggatgcgga 3540
tagagaggcg gcggcggcgg gcctcggagg tggtggcgga gccgtagctt ggctggggat 3600
gggatggtgg ggaggggatt gattttettt eetggagatt getgettaat eetttgaaaa 3660
tgcgagaggt ggagggttgt tttattttga taaaaagggt aaggtgcgct gggggcctga 3720
gagtgtgagg aagaaatcct cttgaggtta cttttgggat ttcaaaacaa taggggattg 3780
ggcatagtgt gagcagacac cggggtagca gcgcctggag cgcggcgccc caggcccgag 3840
gegggettge aggtggtgee ggeteggaag gaatgageea agaeagggee etggggeggg 3900
gcaaggacca gcgcgcgcg ccttgaacgc caggtttgca gagtcgccat ggagatgctg 3960
ggccegetee gateggteet tgteeetgga aggeggaate teeetggeta getetaagga 4020
agggtggaag agatttgggt gcttcccggg aggcgggaaa acgtgtggtt tgggacaagg 4080
geaggagteg ceagacteea gegggeaggg atageattgg ettecetatt cageeegagg 4140
atetggagte gtgteetgee teccaagatt ceagetggea tggggaaage teeetegeag 4200
tgataactaa agacaattgt ctttagcaag agacagaagg ggctgcaggg ggcaaaagga 4260
ttetttgaat acteacacat caaaggaaag gtecacagag teettggace agtateteee 4320
agaaaacttt ttgggetteg tagaacetga gtggeaatga aaagaetggg cageteagee 4380
ctttggttaa ttcccaaaat tgcagttact cacttgcaag cgatcacaaa atccatgtta 4440
tgtgaaaagc aaatatcagg ggcttctctg ggctcaagtg gtggtgttgg cattttccag 4500
tttctcctaa gaaattttac caactccgca ggcttgtttt aggggaatgg atctctaaac 4560
aggetgaaga getggtatee aaageeagat etetagaetg eaateteeaa tagaaggaaa 4620
atatttctag aactgtctct ctgtccagga gaaggaattc cagcacactg gcggccgtta 4680
ctagtggatc cgagct
           SEQ ID NO: 2
<210> 2
<211> 2718
<212> DNA
<213> Homo sapiens
<400> 2
ggtaccttgc tcttggcagt gagcgtgaat gaatggcaca gctcagcccc tgaagcctgt 60
gtgcagagat tgagggattg tgatggagta gttcattcat gctcatgtta aggggggtgc 120
taatagcaga ctagtgctcc tgcgattatt aatatctagg tctgggacag attgtgatgg 180
ettetttee agttgeeace teageagaaa gggaaataga aaaccetaac ttgtaaagtt 240
```

agacaattag actgtaaagt ttgtatatgt gacaacttca gatacaaaga cacacactta 300

```
cccttgacgg ggcttaagag gagagtgtca aacataatac caaagtgaaa gaagatagct 360
cttcatctac aaattatttt taaacacatt taccaggtta aacaataact aatttttcgg 420
aagagaagag tacccaaagt caaatgccct aagacgaaga gatgcttatg gcatttttt 480
ttaaataaag aaaatgcaaa gttagagtgg ttctgaagga acctaggatg aataaggtac 540
agacatgatt attctaatgg tgcagacagg attgagagag aaggggggag gggagagatg 600
gagaaaggca tggatggaag atgacgtttg gattcagatt ttggaaagga gagtaaagga 660
aggaggtaag cagagattta ttttttaaat tttattaatg tgttttcccc tctttttctt 720
gttatttttc tcatctgtct gttcatactt ggatattttg tccaataaac tatcttctaa 780
ggactctgaa aatgcactga atatttttgg agggtttact ggggtgccag acgccacttt 840
aggagtttta catatcctct ccatttcatt tagttctctt agcacagaga agtgggagaa 900
gatagtccca ttttacaggt gggatgaaga gagagatgga ggaatttgcc ccaggttact 960
cagctagaag gtggtgaaga actcaagcct tcggatatca gcgcctggca tttaactacc 1020
aateggteet getgggaete eggeteetet ggeaceatee eegggaeeta eteagagagt 1080
ttgcacgtgg ccggtcgcgt tccatcgtct aacaaggtcc agcacagcge aaatccgaag 1140
atcgtctacc ccggggaaaa agagagtctg tttaattctc ctgtggccct ccaagtgagt 1200
tettttgggt tecattgeet agacgaggaa agtgaggett tgeetgetet gegeteacag 1260
ggtcggcaag tagtgggacc ctaggttcct gcagtattcc agagataatc aaagctgcac 1320
aggtotogto attittatgo aaaggogtoo ggaaggotog aactotocot tgcacaagco 1380
catctgtctc tgtgcgccgc ccccgggaca cggaagcagg cggcgagcag cgccgagtgg 1440
gtggagaacc gtcccccgcc actcacccct cggccaactc tccgcgcctt ctcagccggc 1500
acceaegagg eegacetete teggeetaaa aaaaaaaaaa aaaaateeeg geeteeeetg 1560
cacceegece geegeeecea gggagetgea ttaatattaa tetegetgaa taattgaagg 1620
ccagagattt attcgagctt cggcggggga gggagcgcag ctgggccgcg tttaggctgc 1680
accaccegeg tgtttcagec gctcgactcc gctggacctg ggacccccag acgtgggagg 1740
atggggtggg tgtgcctgcc tgtgagtttg ggggtgagtg tgagctgaag cgggtgctcc 1800
ggggagtgag gagggagcgc caggggctgc tccagggagg cggagacgga ggggcatccc 1860
gggteteege geggtegeet gegetteace eegeacgggg tgacetgggg ceaegeggge 1920
ttcaggggaa acaatagcta ctccttagat cetgggctcc tgccaceggc tgcccaagcc 1980
ttcccggacg agcggcgggg cctcttttct tatttggcta atttatggcg agaggctggg 2040
ggaagggatg gcagaggagg gaccgcgact gaaaatgggg gcgggggggg gcggttaaag 2100
gagttgcccg aggcggcggc gcgggtgatg tcagctctcg acgaaaatag agagggatcg 2160
cctgcaaatc cccagctccg gcggggctaa accttgcaat ccctccctgg ccggcgccga 2220
gccagagege ageggeetee acegeeteee caggegegea cacaceegea caegegeaeg 2280
cacgeteace gteetetgee aceaetetet geteeegeea etegeegege eegegageee 2340
cgcagcaaag cacaggtggc agcggctgca ggggcgcatc gccggcgtgc gccctcctgc 2400
agccctgggc gcatcgctct ctcggggaag ccaccctcgg agcccccgga gctccccgcc 2460
aagegeeate eeegegggeg gaggggageg egggtegege geegtggaga geegggaege 2520
ggattagege eegeaggage eteetgegee egttgaggeg etaaaggget taeeeeggag 2580
gegggtggaa gggegggeag aggeteetet taaataeege teeeggeege aettegeget 2640
cacceeggeg teegetttet eeetegeeca cagetgeegg atagtgetga agaggagggg 2700
                                                                   2718
gcgttcccca gaccatgg
<210> 3
            SEQ IP NO: 3
<211> 2454
<212> DNA
<213> Homo sapiens
<400> 3
ggtaccttgc tcttggcagt gagcgtgaat gaatggcaca gctcagcccc tgaagcctgt 60
gtgcagagat tgagggattg tgatggagta gttcattcat gctcatgtta aggggggtgc 120
taatagcaga ctagtgctcc tgcgattatt aatatctagg tctgggacag attgtgatgg 180
cttcttttcc agttgccacc tcagcagaaa gggaaataga aaaccctaac ttgtaaagtt 240
agacaattag actgtaaagt ttgtatatgt gacaacttca gatacaaaga cacacactta 300
cccttgacgg ggcttaagag gagagtgtca aacataatac caaagtgaaa gaagatagct 360
cttcatctac aaattatttt taaacacatt taccaggtta aacaataact aatttttegg 420
. aagagaagag tacccaaagt caaatgccct aagacgaaga gatgcttatg gcatttttt 480
ttaaataaag aaaatgcaaa gttagagtgg ttctgaagga acctaggatg aataaggtac 540
```

ggggcgttcc ccagaccatg g

```
agacatgatt attctaatgg tgcagacagg attgagagag aaggggggag gggagagatg 600
gagaaaggca tggatggaag atgacgtttg gattcagatt ttggaaagga gagtaaagga 660
aggaggtaag cagagattta ttttttaaat tttattaatg tgttttcccc tctttttctt 720
gttatttttc tcatctgtct gttcatactt ggatattttg tccaataaac tatcttctaa 780
ggactotgaa aatgcactga atatttttgg agggtttact ggggtgccag acgccacttt 840
aggagtttta catateetet eeattteatt tagttetett ageacagaga agtgggagaa 900
gatagtecca ttttacaggt gggatgaaga gagagatgga ggaatttgee ecaggttact 960
cagctagaag gtggtgaaga actcaagcct tcggatatca gcgcctggca tttaactacc 1020
aateggteet getgggaete eggeteetet ggeaceatee eegggaeeta eteagagagt 1080
ttgcacgtgg ccggtcgcgt tccatcgtct aacaaggtcc agcacagcgc aaatccgaag 1140
ategtetace eeggggaaaa agagagtetg tttaattete etgtggeeet eeaagtgagt 1200
tettttgggt tecattgeet agaegaggaa agtgaggett tgeetgetet gegeteacag 1260
ggtcggcaag tagtgggacc ctaggttcct gcagtattcc agagataatc aaagctgcac 1320
aggtotogto attittatgo aaaggogtoo ggaaggotog aactotocot tgcacaageo 1380
catetytete tytycyccyc ceeegggaca eggaageagg eggegageag egeegagtgg 1440
gtggagaacc gtcccccgcc actcacccct cggccaactc tccgcgcctt ctcagccggc 1500
caccegece geegeececa gggagetgea ttaatattaa tetegetgaa taattgaagg 1620
ccagagattt attcgagctt cggcgggga gggagcgcag ctgggccgcg tttaggctgc 1680
accaccegeg tgtttcagec getegactec getggacetg ggacececag acgtgggagg 1740
atggggtggg tgtgcctgcc tgtgagtttg ggggtgagtg tgagctgaag cgggtgctcc 1800
ggggagtgag gagggagcgc cagggggtgc tccagggagg cggagacgga ggggcatccc 1860
gggtctccgc gcggtcgcct gcgcttcacc ccgcacgggg tgacctgggg ccacgcgggc 1920
ttcaggggaa acaatagcta ctccttagat cctgggctcc tgccaccggc tgcccaagcc 1980
ttcccggacg agcggcgggg cctctttct tatttggcta atttatggcg agaggctggg 2040
ggaagggatg gcagaggagg gaccgcgact gaaaatgggg gcggggggg gcggttaaag 2100
gagttgcccg aggcggcggc gcgggtgatg tcagctctcg acgaaaatag agagggatcg 2160
cetgeaaate eccageteeg geggggetaa acettgeaat eccteeetgg eeggegeega 2220
gccagagcgc agcggcctcc accgcctccc caggcgcgca cacacccgca cacgcgcacg 2280
cacgeteace gteetetgee accaetetet geteeggea etegeegge eegggageee 2340
cgcagcaaag cacaggtggc agcggctgca ggggcgcatc gccggcgtgc gccctcctgc 2400
agecetggge geategetet eteggggaag ceaccetegg agececegga gete
<210> 4
            SEQ ID No: 4
<211> 861
<212> DNA
<213> Homo sapiens
<400> 4
ceegggtete egegeggteg cetgegette acceegeacg gggtgacetg gggccaegeg 60
ggetteaggg gaaacaatag etacteetta gateetggge teetgeeace ggetgeecaa 120
geetteeegg acgageggeg gggeetettt tettatttgg etaatttatg gegagagget 180
gggggaaggg atggcagagg agggaccgcg actgaaaatg ggggcggggg gcggcggtta 240
aaggagttgc ccgaggcggc ggcgcgggtg atgtcagctc tcgacgaaaa tagagaggga 300
tegectgeaa ateceeaget ceggegggge taaacettge aateceteee tggeeggege 360
cgagccagag cgcagcggcc tecaccgcct ccccaggcgc gcacacacee gcacacgcgc 420
acgeacgete accgtectet gecaccaete tetgeteceg ceaetegeeg egeeegegag 480
```

ceccgcagca aagcacaggt ggcagegget geagggege ategeeggeg tgegeette 540 tgcagecetg ggegeatege tetetegggg aagceacet eggageeee ggageteee 600 geeaagegee ateccegegg geggaggga geegggteg egegegggegg agageeggga 660 egeggattag egecegeagg ageeteetge geeegttgag gegetaaagg gettaeeeeg 720 gaggegggt gaagggeggg eagaggetee tettaaatae egeteeegge egeaettege 780 geteaeeeeg gegteegett teteeetege eeacagetge eggatagtge tgaagaggag 840